

CYBER SECURITY

TIM GUYOT, KB1POP—RARA VICE PRESIDENT

The internet exposes us to great things and is an amazing (and increasingly vital) tool for sharing information. But it brings with it a nasty world of hackers and cybercrime. Every week it seems as if there is some new reported hack exposing millions (or billions) of people's personal data, taking down a network or performing some malicious act.



So is it the Wild Wild West or a utopia of information-sharing?

Join us for our December presentation, where this month's speaker will discuss computer and internet security and provide critical tips on how to protect yourself and your identity online.

- Have you ever agreed to install software that included "special offers" or bundled components?
- Do you postpone system and software updates?
- Have you ever clicked on a warning box that pops up while browsing or taken the 'click-bait'?
- Would you insert an unknown USB or CD into your device or computer?
- Have you been tricked into clicking though an email that looks legit?
- Do you use the same password on more than one site?
- Do you use simple passwords like "password" or use personal information in your passwords like a street name or a pet's name?
- Have you ever left a new device at factory settings?

If you've said "yes" to any of these questions, then come to this month's presentation and join the discussion. Scott Theis will cover many of the common threats you can encounter online and teach you how to protect yourself both as a ham and as a computer user. A little knowledge can go a long way to protecting yourself from the ever-expanding world of hackers.

Scott, W2LW, is the RARA Webmaster and during the day is a software developer specializing in document processing, editing and computer languages.

Join us for the next RARA meeting at BSA Headquarters, 2320 Brighton Henrietta Town Line Rd, Rochester, New York 14623

DECEMBER 2017
VOLUME 70, ISSUE 4

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BOARDZ BUZZ

FOREST SHICK, WA2MZG—RARA PRESIDENT

Starting with this issue of the RAG we are renaming the **Prez Sez** to the **Boardz Buzz**. Each month a different member of our board of directors will present their thoughts in this space. I have written this month's article and then our vice president, Tim Guyot will write the January article and so on.

Moving on.

When you buy a house or a car, when you choose a school for you or your children, when you pick a town or county to live in, when you apply for a job, some of the important assets you are seeking are benefits. What are the benefits of the opportunity I select.

When you joined RARA, what was on your mind – what benefits does RARA offer? What do you get for membership?

When I joined RARA a few years ago it was to get more involved in the local ham radio community and one very important reason was to reconnect with an old friend from grammar school, RARA's vice president at the time, Bill Marinucci.

In this time of cell phones and internet, personal contact is not necessary, support and companionship has gone from personal to virtual. What are the benefits of being a RARA member?

That is a good question! I will answer it from my point of view as a ham, as a member of RARA and as President of RARA. You should do the same. Where our lists diverge, please send me your new ideas and your differences. I'll begin:

- | | | |
|--|--------------------------------------|-----------------------------|
| • Meeting new people – hams, friends | • Picnic | • Membership Reward Program |
| • Elmers to help with different ham radio activities | • Auction | • Renew membership |
| • Monthly newsletter | • Hamfest | • Banquet tickets |
| • Banquet | • Monthly meetings and presentations | • Gift certificates |
| • Winterfest | • License classes | • Membership fee structure |
| | • Free license testing | • ARRL membership discount |
| | | • Public Service |

Tim Barrett our Membership Secretary has articles in this issue about our Membership Reward Program and ARRL membership discount.

I am a builder and experimenter. I'd rather build a radio or station or antenna than buy one, although I love my KX3! Some clubs offer build it projects for club members to participate in. At the last board meeting we were discussing a build it project in regards to new members, new hams, and getting a license upgrade from technician to general. What might we offer as a build it project to increase activity and interest in our organization? Would this be a benefit?

One possible idea was to build a simple sideband HF radio. I have a description of a possible project later in this issue. Unfortunately it is not as simple as—hey, let's build a radio.

With any new activity the club decides to tackle, there is planning and costs and member buy in. Virtual membership just doesn't work. You have to be present. You have to be a member. You have to participate. How would virtual public service for the Pumpkin Patrol work?

The board would like to know what you see as a membership benefit? As a new member, as a new ham, as a person considering joining RARA, as a seasoned ham radio operator, as a life member of RARA. What realistic benefit would you like? An activity? A presentation? Thoughtfully consider this request and share your ideas with the board. Send an email to president@rochesterham.org

Thank You

CALENDAR OF EVENTS

DECEMBER 6TH - RARA General Meeting

7:00 PM at BSA Headquarters, 2320 Brighton Henrietta Town Line Rd

DECEMBER 7TH - RARA Board of Directors

5:45 PM at Novaworks, 333 Metro Park, F-500

THE FUTURE OF RARA

Gary Skuse, KA1NJL

RARA, like any other healthy organization, changes. Most of those changes are evolutionary in that they occur so slowly that we don't even see them. An example is the average age of our membership. Each month at our meetings we see the same folks we've known for years, our friends and fellow hams, but if you step back you realize that the average age of our membership is increasing. This is readily apparent to me when I see images of myself operating or doing club projects a few years ago and ask myself "who is that (remarkably good looking) young guy?" and I realize it's me. However, this observation means that we do not have many new young members joining us.

While attendance at our monthly meetings rises and falls, on the average the number of members attending has more or less stayed constant yet as of this month the club has about half as many members as it had two years ago. That is a drastic and not so evolutionary change. Where has everyone gone? What is it that discourages former members from renewing their memberships?

Certainly we can simply let things take their natural course or we could be proactive and identify ways to keep members engaged and ways to attract new members. I am in favor of the latter. There needs to be reasons for members to pony up their dues each year and apparently those reasons either don't exist or they are not obvious. As a member of your Board of Directors I have volunteered to collect information about where our membership would like the club to go and to collect information about the experiences of other clubs.

In this light I have two requests. I invite two club members to help me in this quest to gather information. We will together form a fact finding committee. If you would like to help, please contact me at ka1njil@arri.org. I also invite every member to share your opinions about what may be missing that led former members to leave RARA and what is missing that would otherwise attract new, younger members. It is conceivable that in this age of Yahoo groups, cell phones, VOIP home phones, Skype and countless other means of communicating that RARA is no longer wanted or needed. Whether that is true or not will be revealed by the data and observations we collect. Please consider helping your BOD steer the club in the right direction, whatever direction that may be.



From Last Man Standing TV Show



Hams serving Hams
We speak your language... QSL?

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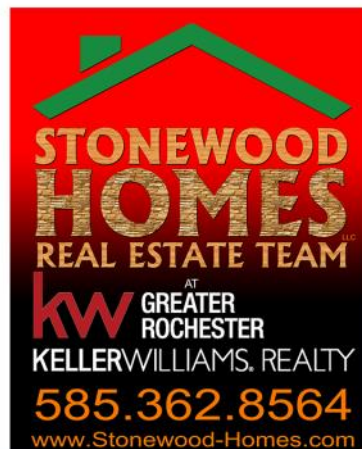
- Estate Liquidation - Downsizing - or just a change of scenery...

*Whatever your real estate needs are, call:
Frank (WB2PYD) or Lisa (K2BGR)*

Lisa Schramm (K2BGR)
Licensed Real Estate Salesperson
LSchramm@KW.com
585.756.3185

Frank Schramm (WB2PYD)
Realtor
Licensed Real Estate Salesperson
Certified Financing Specialist
FSchramm@KW.com
585.362.8564

Keller Williams Realty Greater Rochester
2000 Winton Rd South Building 1-201
Rochester, NY 14618



MEETING BREAKOUT ACTIVITIES

Tim Brown, WB2PAY, RARA Education Coordinator

The "Break Activity" for the December meeting will be power supplies, batteries, power connectors and power adapters used by Amateur radio. This is a short SHOW AND TELL period during the break and will be set up in the front lobby.



HOW IS YOUR RIG POWERED?

Bring and display your power source or power supply during the break. Share your equipment and experience with the group.

There will be a limited number of power pole connectors available for sale at \$1 per set of red and black.

A crimping tool will be available to put power poles on your power supply leads.

RARA ACADEMY

RARA Academy provides workshops on a variety of Ham Radio topics and interests.

Workshops have included Digital communications, IRLP, Echo Link, WinLink, Fox Hunting, build a 20m and 15m fan dipole, 2 meter tape measure yagi, just to mention a few.

What would you like to learn more about?

Digital Modes, Rig interfaces, Building baluns, Soldering Techniques, SDR, Mesh Networks, D-Star, Fusion, DMR, Logging software etc. The list of topics that interest Hams is extensive.

Let us know what you would like to learn more about.

Drop me a note at the following email:

tjbrown@rochester.rr.com

RMSC Ham Radio Exhibits

Peter Fournia, W2SKY



Picture by N2BNE

RARA will again host amateur radio exhibits at the Rochester Museum and Science Center for 4 days during the Christmas – New Years holiday. This is part of the RMSC Holiday Science and Technology Days and will be the 19th year that we have participated in this event. It is a MAJOR exhibit for ham radio that exposes hundreds to thousands of people to our hobby / advocacy.

We have many basic electro-magnetism and Morse Code exhibits ready to roll. However, we are always looking for new and interesting additions. Do you have something to add? Some ham volunteers bring their own project to exhibit when they are present while other volunteers may leave the equipment so others may demonstrate it.

The dates are Wednesday, December 27 through Saturday, December 30. from about 10 AM to 3 PM each day. There will be a very active special events station led by Doug Stewart, N2BEG of the RDXA. RARA will lead the hands-on exhibits. RARA typically has 2 to 4 hams that demonstrate aspects of ham radio and radio communications technology. RDXA staffs and operates the HF special events station.

More information is available in the "Public Service" section on the RARA website: www.rochesterham.org You can also sign up on the website to volunteer for a day of your choice. We will also pass around a sign-up sheet at our December 6 RARA meeting.

SKYWARN RECOGNITION DAY 2017

Duane Fregoe, K2SI



SKYWARN Recognition Day will be December 2, 2017 (0000 – 2400 UTC). In local terms it is Friday December 1st, 7:00 PM till Saturday December 2nd, 7:00 PM. National Weather Service offices across the country will be on the air for 24 hours. This special event was started in 1999. The goal is to contact as many weather service offices as possible using repeaters, IRLP, Echolink, and HF. This is a fun event for new hams that may only have a technician license since they have privileges for repeaters, Echolink, and IRLP. Many of the weather service offices will be on Echolink and IRLP. The National Weather Service office in Buffalo will not be participating this

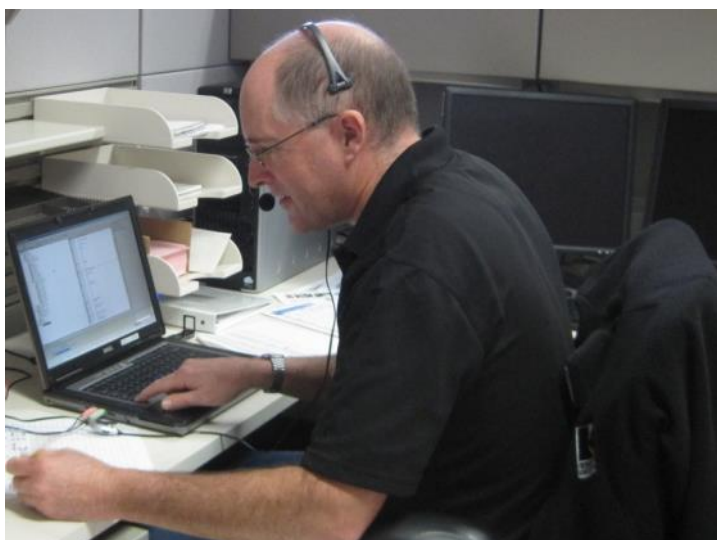
year, the first time in 18 years. There was an accident earlier this year. They hope to raise a new tower and antennas in the spring and be ready for SKYWARN 2018. Submit your total number of weather service office contacts for a certificate from the National Weather Service. More information is available from: <http://www.wrh.noaa.gov/mtr/hamradio/>



2nd HF Station at WX2BUF



KB2NCI on the VHF Station at WX2BUF

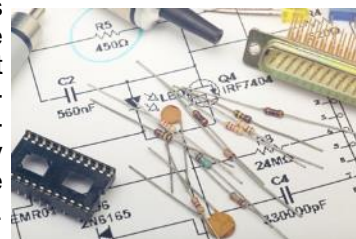


K2SI on the Echolink Station at WX2BUF

2018 RARA ACADEMY

The RARA Academy is back for 2018. We are planning short breakout sessions during the monthly General Meeting to introduce a subject followed by an in-depth session on the 2nd Saturday of the month.

Our first session on January 13, 2018 from 10AM to noon. Sign up at the January General Meeting or on line after the start of the year.



Depending on the location class size may be limited. All classes are free unless the topic requires kits or other consumable electronics.

Our first session in January will be on power connectors, cabling, batteries and safety. Followed in February with a hands-on Arduino programming workshop.

Come join us. Learn and share!

Scott Theis, W2LW
Tim Brown, WB2PAY
RaRa Education Coordinator

The RARa Rag

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WHY JOIN RaRa?

by Ed Gable, K2MP, President

This question has been asked of us many times. Thus I wonder how many times this question has been repeated to you, our members. A good and fair question it is too. So here goes.

The Rochester Amateur Radio Association, Inc., now in its 46th year, is chartered under the Incorporation laws of the State of New York as a Non-profit Educational and Scientific Association and is affiliated with the American Radio Relay League. Aside from the basic fellowship with others of similar interest, RaRa offers a wide variety of programs and activities that should fulfill anyone's needs. Let me list a few. Our monthly meetings allow you to keep up with current events through various reports, informal chats with fellow members from all areas of expertise, and programs ranging from technical to travelog. Special meetings each year are devoted to our popular ham equipment auction, a program by the Antique Wireless Association, and a joint meeting hosted by one of the Kodak Amateur Radio Clubs.

On the social scene you will find a chance to treat the XYL to an excellent evening of fun at our annual Valentine Day Dinner-Dance. On the lighter side, the whole family will enjoy the fun, food, and games at our June picnic.

Service to the membership is of prime importance in any organization and RaRa is no exception. Perhaps you think you cannot benefit by joining RaRa. I doubt it! No Amateur can say he has not benefitted by the strong and ever improving posture Amateur Radio enjoys today. Just a few years ago our ranks were decreasing in numbers. Now, a tremendous turn around is in evidence by all time high Amateur population figures. This turn around is to the good of everyone and is a direct result of organizations such as RaRa. Our code and theory classes have been turning out twenty to thirty new Amateurs per year for over a decade. Other services include the local Ham Directory, an excellent monthly publication called the RaRa Rag, and a club station, K2JD. This modern equipped station is available for use by all members.

Another important aspect of Ham Radio, in fact the very reason we exist, lies in the public service we can provide. RaRa is dedicated to providing the community with a core of well trained radio operators equipped to provide emergency communications services. Our Public Service Committee works closely with

December 2nd RaRa Meeting

Our meeting this month will be sponsored by the Kodak Office Radio Club. We will get together in their headquarters at 343 State Street. The entrance is on State Street with parking in the lot across the street. Please use the smaller entrance on the right side of the building at the curved driveway. Take the elevator to the 9th floor. The meeting is in the auditorium adjacent to the elevator. You will be asked by a Security Officer to sign in at the entrance door.

While the question remains the same, it's interesting to see how much has changed over the years.

I think this article provides sufficient support for asking the question again.

See you there.

D. D. (ditdit) Ditt
a.k.a. WA2ZNC, and suspected co-writer of "The Dit Dit Dit Dit Song"
Copyright 1972 by Ryerson Music

VHF Group/Repeater Group Huddle For Contest

On December 9th at 8 p.m. there will be a joint meeting for members of the VHF Group and the R.R.R.A. at the factory of RF Communications, 1680 University Avenue. The purpose will be preparation for the January VHF Contest, and to publicize some new twists and local incentives for participants. The VHF Group has elected its Contest Chairman, Dick Place, WB2JLR, from Ontario, New York.

and has the direct support of County and City officials. On the fun side of public service work, RaRa regularly supplies communications for such activities as automobile Ralleys, Cross country Balloon races, equestrian meets, yachting Regattas, parades, and the like. Perhaps this is your thing.

If not, perhaps you would like to assist on our Hamfest Committee. RaRa members are proud that Rochester sports one of the largest Hamfests in the country. This is no small feat and is possible only by the hard work of many dedicated members.

Statistics show that one out of every three Amateurs in the greater Rochester area are members of RaRa. If you are a member pass this on to a friend. If not a member, how come? I'd really like to know.

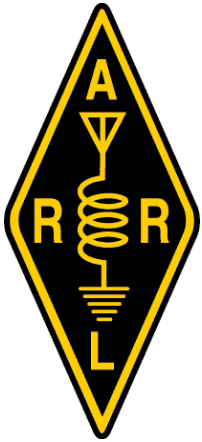
RARA AUCTION 2017

Tim Barrett, K9VB



REDUCED RATE ARRL MEMBERSHIP

Tim Barrett K9VB



As you probably know, RARA is affiliated to the ARRL. One of the benefits is that we receive a commission for every new ARRL membership and renewal we submit to ARRL Headquarters.

- Clubs retain \$15 for each new membership OR lapsed membership (of two years or more).
- Clubs retain \$2 for each renewal. A renewing member can renew at any time, even before their current membership term expires.

RARA chooses to pass this benefit directly to our members by offering a \$15 discount to new members joining the ARRL and \$2 discount for annual renewals.

Joining the ARRL

If you wish to join the ARRL and take advantage of our discount, then fill out the ARRL form (downloaded from [here](#) leaving the payment details blank and send it to the RARA Membership Secretary, PO Box 9333, Rochester NY, 14692, together with a check made out to RARA for \$34, (the \$49 membership dues less the \$15 RARA discount). We will process the membership for you and you will receive full membership from the ARRL directly.

Renewing Your ARRL Membership

Unfortunately, we only receive \$2 discount for renewing members but if you wish to take advantage of that, follow the same procedure above but in this case the check needs to be for \$47 (the \$49 membership dues less the \$2 RARA discount).

Note you must be a current paid up member of RARA to take advantage of these offers.

THE RARA REWARDS PROGRAM

Tim Barrett K9VB

For a club like ours to be successful, the time given voluntarily to support activities by our members is essential. Some volunteer their time for special activities such as helping at the Hamfest or are active in Public Service Events. Others take on roles on a regular basis which require an ongoing time commitment. I think many of these contributors would say that they do what they do for the satisfaction it gives them to be 'giving back' something to the community. Nevertheless, the club is extremely grateful to these volunteers as without them club activities would come to a halt. The RARA rewards program is the club's way of showing their appreciation.

As a reminder, here is how it works. Points are awarded for making presentations at our meetings, taking part in public service events and other club tasks. Points are also awarded for non-elected club offices listed later in this RAG. *Note: elected offices do not earn points.* The points awarded are tracked by the Membership Secretary (that's me!) and are available for a variety of uses such as going towards the cost of membership renewal or tickets to the annual banquet. Last year we extended the program so that points can also be redeemed to buy gift vouchers from [the ARRL Store](#), [Ham Radio Outlet \(HRO\)](#) or [Universal Radio](#). So, you can benefit from what you do for the club by getting stuff for your shack – click on the links to see what you can get!

How does that work? Simple. We redeem points at a nominal rate of Two points = One Dollar. We make gift cards available in units of \$10 with each \$10 requiring 20 points.

So, you already have some points saved up? How do you get your gift cards? Easy. Go to [our website](#) to see how many points you have. You will need your access code. (If you have forgotten it, click the link and it will be emailed to you). Decide how many of your points you want to use. Remember these must be in units of 20 points: **20 points = \$10 voucher from ARRL, HRO or Universal.**

Email your selection to the membership secretary (Membership@RochesterHam.org) stating:

- Your name, call and home address
- How many points you want to use
- Gift cards required (ARRL, HRO or Universal)

We will validate your request, order the card(s) and mail them to you when they are ready. That's all there is to it!

If you already have plenty of points, give it a try - and thanks for all your efforts for the club – they are appreciated! If you don't have points and would like to do something for the club and earn some points in the process, take a look at the [Membership Awards page](#) and [the Public Service Event page](#) on our website or speak to one of the board members about things you can do! We have several vacancies that will not take up a lot of your time and you will get to know other members and earn the gratitude of the whole club.

RARA WINTERFEST, SATURDAY FEBRUARY 10TH, 2018

Our eighth annual RARA Winterfest is coming up soon and is promising to be a great event. As always, we will have our very popular crockpot cook-off and everyone is invited to bring their favorite creation to share. You are encouraged to



bring anything you can make in a crockpot. As before, we will be awarding prizes of RARA Membership Points to the top entrants. The first place winner will receive 20 points, and second place will get 10 points. We are also inviting everyone to bring a dessert to share and we will be awarding 20 RARA Membership Points for the best one. Desserts do not need to be made in a crockpot but if you can do that, go for it. We encourage you to put on your chefs' hats and wow us with your sweet culinary creativity. Of course, there is no entry fee for these cook-offs so simply sharing the wonderful delicacies will make everyone a winner.

A special bonus this year will be a door prize of an [Arduino Engineering Kit](#) to be won at the event. You must be there at the time of the draw to have a chance of winning.

As always, we encourage you to bring radios and antennas so we can operate and have fun. During the past several Winterfests we have had visitors who were interested in becoming hams. Active operating positions are a great way to introduce them to the hobby and encourage them to become hams themselves. Of course, if you know anyone who would like to learn more about our wonderful hobby please invite them to join us.

We will be there around 10:00 am to set up radios and antennas and anyone willing to help is welcome to join us. We are looking for one or two volunteers to help us set up food and tables so if you can do that please email Tim.K9VB@gmail.com to let us know.

We encourage everyone else to plan to get there around 11:30 am when the eating and operating will begin. RARA will provide non-alcoholic beverages along with all the necessary paper products that will be needed to enjoy the great food we will certainly have. I'll look forward to seeing everyone there. The 'fest will be held on Saturday February 10th at the Stewart Lodge in Mendon Ponds Park. The lodge has heat, a fireplace, it is located near the bathrooms and there is plenty of parking. You can find a map [here](#).

DONATION IN MEMORY OF JOHN E LEVIS KB2FXI

RARA would like to thank John M. Levis, N2JDN for his kind donation of \$100 in memory of John E. Levis KB2FXI.

1, 2, 3 O'CLOCK, 4 O'CLOCK SoftRock

Forest Shick, WA2MZG

Are you sitting around the shack wondering, "What will my winter project be? Maybe I'll just listen to Bill Haley and His Comets as I rock the winter away!" Do you like SoftRock? Do you like building equipment? Would you like to try building a radio? How about building an inexpensive kit? A 40, 30, 20M sideband software defined radio / transceiver?

Let me introduce you to the [SoftRock RXTX Ensemble Transceiver Kit](#) from [Five Dash Inc.](#) For \$89 you receive a kit which you configure to operate on 5 different band sets between 160 and 10M. I built mine for 40 / 30 / 20 M. This is a real kit. You solder. You wind transformers. There are through hole and surface mount components and well-written assembly instructions with theory and videos.

This is an easy kit for the experienced builder but not too difficult for a newbie builder. Soldering 2 of the surface mount IC's will be a bit of a challenge but it can be done. The components are bagged by type and not value. Care should be taken when selecting a part to install. The instructions encourage the builder to measure all resistors – a very wise thing to do. There were times during the assembly when I could not tell the difference between brown, red and orange. The color codes on the resistors are not as vivid as they used to be!



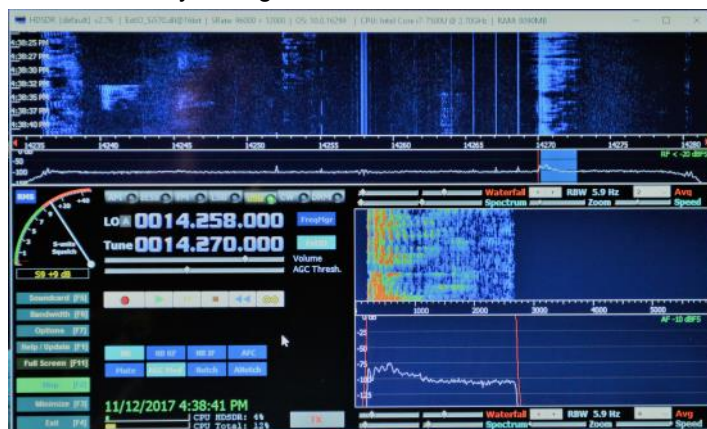
RXTX Ensemble Components



Completed RXTX Ensemble

Possibly the hardest process in the construction is winding the 11 toroids and transformers. The assembly instructions reference tutorial videos for everything: soldering, winding toroids and what is SDR.

There are a few deficiencies. The pictures of the circuit board in the assembly instructions are of the 2010 version of the board and I was building a 2015 version. The difference were minor and easily figured out. The author of the assembly instructions uses a program called ROCKY for testing and operation. ROCKY would not run properly on my Windows 10 laptop. The alternative is to use HDSDR (High Definition Software Defined Radio), a popular SDR program. Its drawback is a lack of organized documentation. You spend much time searching user groups, web sites and general experimenting but in the end, it does the job.



HDSDR

Taylor, Taylor, Daylight come an me wanna go home

With a little help from a traditional Jamaican folk song, Day-O (The Banana Boat Song), I will side track us for just a moment. A few years ago, I read some articles about the Taylor mixer and building a simple SDR receiver. The SoftRock RXTX Ensemble was the perfect kit. It uses the Taylor mixer in the receiver and the transmitter. As a matter of fact, they are the heart of the radio. I did not have to buy and scrounge parts to build my own transceiver. This kit has it all!

When the subject of building a SSB transceiver kit as a possible club project came up at the board meeting last month – this was it. I had to buy it to see how well it worked. It works very well.



10 Watt Amplifier Components

Can I buy an amplifier on time?

Well, Moby Grape (Naked If I Want To) may want to buy an amplifier on time but I think [Pacific Antenna](#) would prefer you pay cash, \$55!



Assembled 10 Watt Amplifier

The RXTX transceiver produces only 1W output. That is great if you are a real QRP buff. I like to think I am but in reality, I like power! At least a few watts of power.

Pacific Antenna has a very nice 10W amplifier kit. Very easy to assemble. Very good instructions and extremely simple tune up instructions: set the bias current of the amplifier transistor.

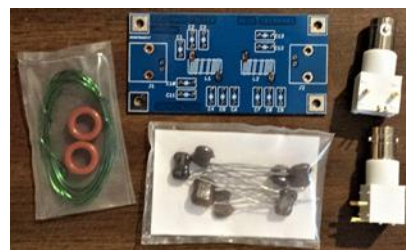
Pacific Antenna is the brave company that became our first virtual vendor and provided their "EASY Kits" for sale in our Country Store at our 2017 RARA Hamfest.

Like the RXTX Ensemble, the components are bagged by type. Use caution when selecting and installing the components. There is heat sink compound for the voltage regulator and the amplifier transistor. This can be a messy substance to deal with even if you have had years of experience. It always ends up where you least expect it.

Assembly is quick. The instructions are very good and there is no software to install. You have 5 large toroids to wind as inductors or transformers. This is a simple process once you have mastered the art of coil winding while building the transceiver.

There is one tricky assembly to fabricate, a temperature compensation diode assembly for the power transistor. The good news is they provide 2 sets of parts in case you make a mistake the first time.

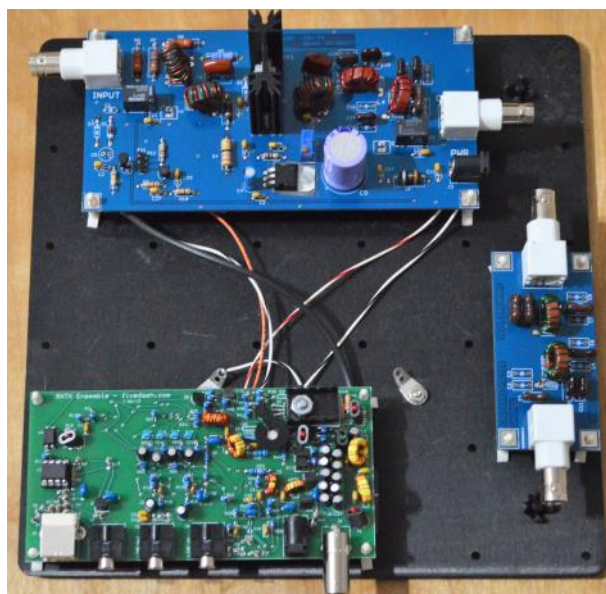
Since I was building the transceiver for 40 & 20M, I would need an amplifier for each band or make the 20M amp work on both 40 and 20. After talking with Pacific Antenna, I learned the input to the amplifier is relatively broad band and the output has a low pass filter with the knee set for 20M operation. They determined that it should work very well, although I would need a 40M low pass filter on the output to eliminate the second harmonic of 40M – 20M when operating on 40M. The second harmonic is really there, I measured it on the spectrum analyzer. Adding the [40M LPF](#) resolves that issue.



Low Pass Filter Components



40M Low Pass Filter



10W 40 / 20M Transceiver

Finally, after building and testing with wires and coax all over the bench, I cleaned up the assembly by mounting it on an aluminum plate. Before Van, N2BNE, gets a chance to ask me if there might be EMI and RFI issues because it is not enclosed in a box. Yes Van, there probably are issues.

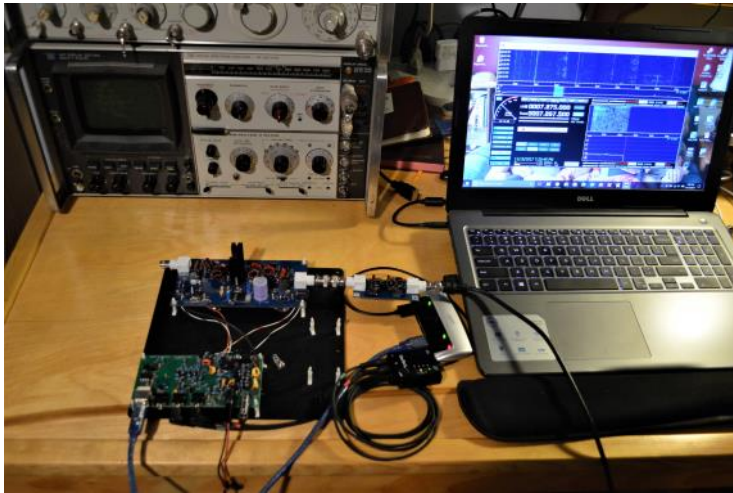
I left the BNC connectors on for easy testing. I connected the transceiver to the amp with RG-174. I am looking for a method to switch the LPF in for 40M operation and out for 20M operation. I will probably resort to relays!

Elmers

James Bennett, KA5DVS, [Pacific Antenna](#)
Tim Brown, WB2PAY
Doug Felsenthal, WA0ODQ
Ed Gable, K2MP
Don Kiser, AC2EV
Chuck Mac Cleur, W8MQW
Tony Parks, KB9YIG, [FiveDash](#)
Jim Veatch, WA2EJJ

which is usually the one in your computer, handles the microphone and speaker audio. For the external sound card I used a Startech USB Stereo Audio Adapter.

The one subject I have not covered is the computer interface. The transceiver requires 2 sound cards. An external sound card is connected to the I & Q signals of the transceiver. A second sound card,



Complete Station

sound card to drive the speakers on your computer.

In receive, the external sound card digitizes the I & Q output of the Tayloe receive mixer. The data is sent to the computer through the USB port. The SDR software demodulates the data and sends it to the internal

Necessary Components

- Computer with internal sound card, speaker and mic
- Mouse
- USB Hub—optional
- External Sound Card
- 2 stereo cables to connect the transmit and receive IQ signals from the transceiver to the external sound card
- 1 USB cable for the transceiver
- Power supply and cable
- Coax
- Antenna
- BNC male to male connector to connect the LPF to the amplifier

In transmit, the internal sound card digitizes the audio from your computer microphone. The SDR software creates a digitized, modulated baseband signal (0—40KHZ) and send this data through the USB port to the external sound card. The external sound card creates the I & Q signals to feed the transmit Tayloe mixer.

Through the magic of modern electronics and software, we have radio!

As you can see, this is a relatively small package. It has minimal power requirements.

My next step is to attempt using a Raspberry Pi3 as the computer. I have a copy of QUISK for the Pi3. As soon as this issue of the RARA RAG is distributed, I will give QUISK and the Pi3 a try. With a bit of holiday cheer, you may read about the Pi running QUISK in the January RAG.

Links

[Five Dash Inc](#)
[Pacific Antenna](#)
[Rocky](#)
[HSDR](#)
[QUISK](#)
[SoftRock Group](#)
[Startech](#)

PLANNING FOR THE 2018 ROCHESTER HAMFEST

Interest has been expressed in planning for a Rochester Hamfest in 2018. The goal would be for RARA to produce the hamfest to serve the needs of the local ham community. The ARRL publishes "The ARRL Convention and Hamfest Planner". This document is available free here. The planning document states that we need to start planning as a club now to conduct a successful hamfest. Specifically, we need to staff the event leadership roles. Please look at the planning document and decide what skills you can bring to the execution of the 2018 Rochester Hamfest.

We will need help in the following areas:

- Publicity
- Exhibits
- Ticketing
- Parking
- Flea Market
- Facilities
- Food
- Talk-in
- Alternate Activities
- Exams
- Raffle and Prizes

PUBLIC SERVICE

Mike Moore, KC2NM, Public Service Coordinator

Pumpkin Patrol

RARA joined Ham Radio organizations across New York State for the annual Pumpkin Patrol which provides monitoring of the bridges over the New York State Thruway. It was reported that this event was begun in the early 1990's as a response to vandals found dropping pumpkins in the path of drivers below. This year, operations were conducted from just after dark until nearly midnight on October 30 and October 31 (Halloween). Amateur stations, operating mobile, were stationed in sight of each of 16 bridges over the Thruway in Monroe County. A net operated during those hours and was conducted on the WR2AHL (145.11) repeater with a roll call each 30 minutes. Stations were asked to report suspicious activities or other concerns on the net for relay to the New York State Police or local law enforcement agencies. The Pumpkin Patrol is held each year at the request of the New York State Police and it serves to eliminate the need to dedicate law enforcement resources to monitoring of the bridges and allows them to address more pressing public safety concerns.

Brad, KB2CHY served as event captain and organizer of this event. Net Control duties were conducted by Tim WB2KAO and Lynn N2IZX. The "Goodie Patrol" is made up of two rover stations which visit the bridge monitors during the night both as a safety backup and to deliver refreshments. Chuck KC2KPL, Diane KC2MZP and Lee WB2JOR served as the Goody Patrol. Bridge monitoring stations were David AB2NG, Ed K1EM, Vic K1PY, David K2DPC, Richard K2UW, Bill KA2WNS, Mike KC2NM, Brett KD2EHW, Tom KD2IOB, Van N2BNE, Reed N2KZF, Max N2MXD, Carolyn N2YPM, Jack W2JAT, Roger W2RMB, Pete W2SKY, Jack KA2CHV, and Dean WB2QCJ.

No acts of vandalism were reported during this event and this is just the hoped for outcome. There was one check in to the net from a Ham "over the road trucker" who thanked us for our service during the event. Thanks to all who participated in this years Pumpkin Patrol!

RMSC Holiday Science and Technology Days

By Peter Fournia, W2SKY

RARA will again host amateur radio exhibits at the Rochester Museum and Science Center for 4 days during the Christmas – New Years holiday. This is part of the RMSC Holiday Science and Technology Days and will be the 19th year that we have participated in this event. It is a MAJOR exhibit for ham radio that exposes hundreds to thousands of people to our hobby / advocacy.

We have many basic electromagnetism and Morse Code exhibits ready to roll. However, we are always looking for new and interesting additions. Do you have something to add? Some hams volunteers bring their own project to exhibit when they are present while other volunteers may leave the equipment to allow others my demonstrate it.

The dates are Wednesday, December 27 through Saturday, December 30. from about 10 AM to 3 PM each day. There will be a very active special events station led by Doug Stewart, N2BEG of the RDXA. RARA will lead the hands-on exhibits. RARA typically has 2 to 4 hams that demonstrate aspects of ham radio and radio communications technology. RDXA staffs and operates the HF special events station.

More information is available in the "Public Service" section on the RARA website: www.rochesterham.org

You can also sign up on the website to volunteer for a day of your choice.

We will also pass around a sign-up sheet at our December 6 RARA meeting.

Peter Fournia, W2SKY and Don Kiser AC2EV will serve as Co-captains for this years event.

RaRa RAGS OF THE PAST

Ed Gable, K2MP – RaRa Club Historian



the **RaRa RAG**

Published by
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 50

December 1997

NO. 4

December Program - Harmonics in Industry

by Rick Wells, W2RW

Each December we have a slight change of pace. The regular RARA meeting is held in conjunction with the Kodak Equipment Division ARC, WA2EGL, at their facility on Elmgrove Road. The Kodak group is furnishing not only their fine facility, but the guest speaker and refreshments as well. Thanks to all the "EGL" members for their gracious hospitality and especially Charlie Escrivá, KB2SOZ, for setting up the evening.

The presentation, *Harmonics in Industry*, will cover the effects of non-linear loads and other electrical disturbances on the Power Distribution System. Problems and recommended solutions will be discussed. The speaker will be Sam Mitra who is an Electrical Engineer with the Eastman Kodak Company.

The meeting location is easy to find. Take Elmgrove Road to the large Kodak plant facility on the West side of Elmgrove. If you're coming off the Rt. 531 expressway, turn left and take Elmgrove southbound. The meeting will be held in Bldg. 1, training Rooms 4 & 5. Bldg. 1 is located immediately behind the flag pole off Elmgrove Road. Parking is in the lot to the South of that Building. Elmgrove club members should be outside to give directions. Turn left just before the traffic circle/flagpole and parking will be on the right. Entrance will be the 1S1 door, which is manned by security staff. There should be people placed along the way to steer everyone in the right direction.

Should anyone have questions or need assistance, there will be talk-in on VHF 146.88 K2RRA/R and UHF 444.750 WA2EGL/R (110.9 pl). Hope to see everyone there and have a happy holiday season.

RaRa Hotline
(716) 442-0587

24 hours a day

RaRa MEETING

December 5, 1997

8:00 P.M.

Kodak Elmgrove

Elmgrove Road

See map on back page

Harmonics in Industry

FROM YOU'RE LICENSE CLASS COORDINATOR

Well, turkey time is coming. Soon it will be Christmas. Maybe Santa will be bringing many goodies for those avid hams. Only 4 weeks till testing time. The novices know everything but the numbers. The count remains the same as far as the number of students that are enrolled. Yours truly is still looking for a theory instructor to teach general theory. If interested they can call me at 865-2585. Happy hamming and Thanksgiving.

Lynn Rosenberg N2IZZ

SILENT KEYS

Ernest C. Brown

K2BWK

October 26, 1997

Herbert Haddleton

WA2MST

October 31, 1997

Robert Shevlin

KA2EFF

November 4, 1997

Bruce L. Kelley

W2ICE

November 6, 1997

Past President & Life Member

20 YEARS AGO, DECEMBER, 1997

Following a long term tradition, see 40 Years Ago, below, was the announcement of the joint RaRa meeting with one of the several Kodak Amateur Radio Clubs. Opening the 1998, season saw RaRa joining the Kodak Equipment Division Amateur Radio Club (KEDARC) WA2EGL, meeting at the new Elmgrove Road facility. Kodak elected for their program one of their own, Mr. Sam Mitra, an electrical engineer who titled his talk "Harmonics in Industry." Sam told the gathering about the effects of non-linear loads and other electrical disturbances on large electrical distribution systems. Talk-in was on KEDARC's own UHF repeater, WA2EGL/R, on 444.750 Mhz. Fred Gern, K2FR, remembered for his long time association with RDXA and contesting, filled a page with his writing where he invited new contesters to jump into an easy and low pressure event, the ARRL 10 meter Contest. Announced within this issue was a note by the FCC that the paper 610 form was being replaced by a ULS system that you can apply for after you receive a TIN number that when associated with your CALL will let you simply contact the FCC's WTB on-line processing computer for doing business with the FCC. This would allow you to save a thirteen cent stamp. It took Ed Gable, K2MP/W2AN, a full page to write the obituary for Bruce Kelley, W2ICE, past RaRa President, co-founder of the Antique Wireless Association, Charter member of the RDXA, past member of the Rochester VHF Group, past Chairman of the Rochester Hamfest and ARRL Conventions, a Fellow of the Radio Club of America, a recipient of the Houck Award for Historical Preservation, a Life member of the ARRL, and an Honorary Member of both the Quarter Century Wireless Association and the Society of Wireless Pioneers, who passed away on November 6, 1997. It's worth reading today. With regret it was reported that Ernie Brown K2BWK, Herb Haddleton WA2MST, Robert Shevlin KA2EFF and Bruce Kelley W2ICE, were reported as Silent Keys. There were no Want

Ads in this issue but Glenwood Sales of Hague Street, city, remained a long term advertiser

40 YEARS AGO, DECEMBER, 1977

This issue opened with President Gable, K2MP, who wrote answering the question "why join RaRa?" A very well written article (if I say so myself) revealed the many membership related operations going on within the organization. VP and program Chairman Len Gessin, WA2ZNC, wrote to inform you that this year the joint RaRa / Kodak meeting will be hosted by the Kodak Office Radio Club with 343 State Street being the rarely visited venue. The program for the evening was Mr. David Ferre', a QC Engineer with RF communications, speaking on digital modulation techniques. And speaking of speakers, Mr. Richard Place, WB2JLR, will be chatting with members of the Rochester VHF Group with ideas on how to enhance club participation in the January ARRL VHF Contest. A new local 15 meter SSB net was announced and called the "Teenage Globe Net," with WA2KDL net control. The net was open to anyone 18 years or younger and DX check-ins were encouraged. With no by-line, an anonymous author told of the exploits of a hardy group of local VHF'ers who went to Delaware and put W2CNS/3 on-the-air for the June VHF Contest. They managed 61,000 points and a nationwide top ten score. In closing they promised next year – Rhode Island. This issue featured full page ads from Rochester's newest ham radio stores. JR's, of 3327 Lake Avenue, featuring Swan, Midland and Cushcraft lines. On the facing page you would find Amateur Radio of Rochester, 1185 Scottsville Road, advertising Kenwood, Wilson, Dentron and Hy-Gain lines. In the Want Ads you found a rare wanted plea where Jerry Vogt, WA2GCF, was looking for a low power 10 meter exciter. Could it be that Hamtronics was preparing a line of transverters?

VE TEAM

The next **ALWAYS FREE** testing session:

Saturday December 16th

Rochester Institute of Technology

Kate Gleason College of Engineering

Gleason School of Engineering

Room 3139, Bldg. 9

Use "J" parking lot

Registration at 9:45AM

Testing at 10:00AM

You do not have to preregister.

To avoid giving your SSN go to:

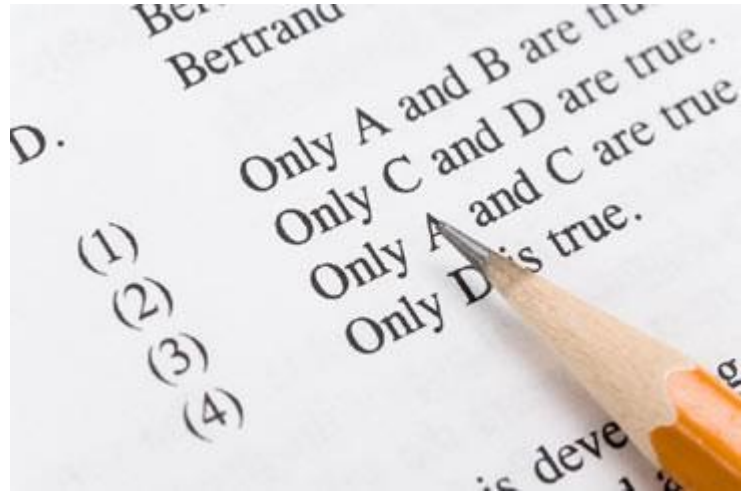
<http://wireless.fcc.gov/uls/index.htm?job=home>

Register and bring the resultant FRN.

For more info:

<https://www.laurelvec.com/?team=RARA>

Don Kiser - AC2EV
RARA Board member
VE Team Leader
585-613-1035



New licensees names are in **BOLD**

RARA CALENDAR

Tim Barrett, K9VB

December 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 ASRAS Monthly Meeting 7.30pm, Gosnell Bldg, RIT	2 AWA Museum Open 1:00 – 5:00pm ARRL 160M Contest TOPS Activity Contest Ukraine DX Contest
3 ARRL 160M Contest TOPS Activity Contest Ukraine DX Contest 10M RTTY Contest SARL Digital Contest ARCI QRP Homebrew	4	5 Phone Fray QRP Fox Hunt	6 RaRa Monthly Mtg 7:00pm, BSA HQ, B'ton Henrietta TLR ROC City Net 8:00pm 3.826 MHz	7 RaRa BoD Meeting 5:30pm, BSA HQ, B'ton Henrietta TLR NCCC Sprint QRP Fox Hunt NRAU 10M Contest	8	9 AWA Museum Open 1:00 – 5:00pm ARRL 10M Contest SKCC Sprintathon Int Naval Contest AWA 1929 QSO Party
10 ARRL 10M Contest SKCC Sprintathon Int Naval Contest AWA 1929 QSO Party CQC Colorado Run	11	12 Phone Fray QRP Fox Hunt	13 ROC City Net 8:00pm 3.826 MHz	14 NCCC Sprint QRP Fox Hunt	15 Russian 160M Contest AGB Party Contest	16 AWA Museum Open 1:00 – 5:00pm OK DX RTTY Contest Feld Hell Sprint Padang DX Contest Croatian CW Contest
17 Croatian CW Contest ARRL Rookie CW	18	19 Phone Fray QRP Fox Hunt SIARC 7.30pm	20 ROC City Net 8:00pm 3.826 MHz	21 NCCC Sprint QRP Fox Hunt	22	23 AWA Museum Open 1:00 – 5:00pm
24 RAEM Contest	25	26 Phone Fray QRP Fox Hunt DARC Xmas Contest	27 ROC City Net 8:00pm 3.826 MHz RSMC Science & Technology Days	28 NCCC Sprint QRP Fox Hunt RSMC Science & Technology Days	29 RSMC Science & Technology Days	30 AWA Museum Open 1:00 – 5:00pm RAC Winter Contest Stew Perry Topband Bogor Old and New RSMC Science & Technology Days
31						

Print this calendar and leave it by your radio.

SAVE THE DATES

Winterfest - Saturday February 10, 2018 - Stewart Lodge, Mendon Ponds Park

Picnic - Saturday July 14, 2018 - Stewart Lodge, Mendon Ponds Park

Banquet - Friday September 21, 2018- Burgundy Basin Inn

NEWS FROM AREA CLUBS

MONROE COUNTY ARES / RACES NEWS

The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month except for the month of November during which we meet on the third Thursday to celebrate Thanksgiving Holiday. Anyone interested, members and non-members, are welcome to attend.

Because of the holidays there will not be a meeting in December.

The next ARES Meeting will be held on: **Thursday, January 25, 2018, at 6:00 PM.**

Meetings are held at the **Greater Rochester Chapter of the American Red Cross HQ, 50 Prince Street, Rochester, NY 14607.** (Located behind the Rochester Auditorium Theatre, 885 Main St. E.)



ARES NET:

Monroe County ARES/RACES meets on the air every Thursday of the month at 7:00 pm, on the 146.61 MHz (-) 110.9 Hz PL repeater. The only exception to that are nights when we hold our regular meeting, generally on the 4th Thursday of the month.

WEB: www.monroecountyemcomm.org

Severe Weather Alerts:

Winter brings severe weather in the form of heavy snow and strong winds. If you experience severe weather, especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. Have each check-in station give you a situational awareness report and emergency power report. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/ Downloads)

NBEMS:

Want to learn about Narrow Band Emergency Messaging System (NBEMS)? It's the latest and easiest way to "Go Digital!" Bring your laptop computer and 2-M handheld transceiver. We will conduct an NBEMS clinic after every meeting through June 2018.

ROCHESTER DX ASSOCIATION, RDXA

RDXA meets the 3rd Tuesday of every month (September through May) except for December, which is the Annual Holiday Banquet. Meetings are open to everyone and all are encouraged to attend.



Meetings are held at the Monroe County EOC 1190 Scottsville Rd. (second floor), Rochester, NY 14624 at 7:30PM.

Monthly programs are announced in the official RDXA newsletter or on the website at www.RDXA.com

Though in the 70's and bright sunshine, it's time to start thinking about the RDXA Annual Holiday Dinner. This yearly event will be held on Tuesday 19 December at Rick's Prime Rib on 898 Buffalo Rd.

This event is open to all "hams" and associates; come and recount the first few "contests" of the season as well as your plans for 2018!

Reservations by 11 December to RDXABANQUET@RDXA.COM Chris, K2CS President, Rochester DX Association (our 70th year)

ROCHESTER RADIO REPEATER ASSOCIATION, RRRRA

The Rochester Radio Repeater Association, RRRRA invites you to attend its December 15, 2017 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 PM. RRRRA's December meeting is unique in that we either get together as a group for dinner or we have a regular meeting. If members would like getting together for dinner let me, N2BZX, know so I can make plans. If you have a location in mind let me know that also. I can be contacted through the web site or on the Megaplex. If I get a poor response I will schedule my Digital TV streaming presentation for December's meeting. I will send out a general email to the membership concerning RRRRA's December plans. The RRRRA officers are Bob Shewell, N2HJD President, Bob ODell, N2BZX Vice President, ED Wilkonski, KC2WM Secretary, and Bob Smith, NS2B Treasurer / Membership Chairman. RRRRA also accepts donations to the club. If you are not currently a member and want to support RRRRA, you can join at our monthly meeting or on our web site www.k2rra.org

ROCHESTER VHF GROUP

The Rochester VHF Group sponsors an informal On-Air Net every Monday at 2100 local time on 144.260 MHz USB and a 6 Meter Net every Thursday at 2100 local on 50.200 MHz USB.

More club information can be found by visiting www.rvhfg.org or just calling in any Monday or Thursday night. All are welcome to check in to these nets.

XRX AMATEUR RADIO CLUB

The next meeting of the XRX Amateur Radio Club will be at 6PM on Thursday Dec. 14th at the Webster Recreation Center. Check our website at <http://xarc.us> for the latest info.

SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. We have License Exam Testing every other month which begins at 6:30PM. The next meeting will be December 13th which will be our annual Christmas get together. We will be meeting at the AWA facility in Bloomfield at 6:30 PM. Please bring an appetizer, desert, or a dish to pass. The club will supply drinks and Pizza. 73's Steve Benton VP SIARC WB2VMR

AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER

ARAST meets the third Thursday of every month at the Town & Country Fire house in Horseheads. C-CARES meets the first Tuesday of the month except February. C-CARES covers the entire area in Chemung, Schuylar and Steuben Counties and everyone is welcome.

Don't forget to mark your calendars for next years hamfest September 29, 2018 located at the Chemung County Fairgrounds in Horseheads, NY. Tickets will be available from any board member and online at our website as we get closer to the venue date. Also need Communicators for the Wine Glass Marathon for 2018. The date has been set for the Sunday following the Hamfest (September 30, 2018). If you can help out, contact the Emergency Coordinator at emergencycoordinator@stny.rr.com as soon as you can. EMO needs to be notified who's out there.

Our website is almost complete undergoing construction. I understand that until the re-write is complete, it will still be usable. Look for the transition to take place after the Wineglass Marathon So go ahead and check out our website at www.arast.org.

Don't forget to check out our repeaters when you come into the area: The N3AQ 147.36(+); W2ZJ-V

COMMUNITY AMATEUR RADIO CLUB, CARC

If you are interested in being a part of this forward thinking and active club, visit us at a meeting or join us on one of our weekly nets. We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7pm. Each meeting has a brief training/refresher period with upcoming topics including: net protocol, repeater set-up/maintenance, and digital signaling. The club holds a net every Sunday evening at 8pm (winter) and 9pm (summer) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30pm on 147.285+. We'd love to hear you check-in! Take a look at the club website for more info: www.k2srv.org

DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communications modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and public [DSTAR hotspots](#) (using the dvprtr board), Yaesu fusion systems on non-club repeaters and DMR. The last mode is being enjoyed locally through a [DV-Mega-Raspberry Pi](#) combination. DCAP meets for breakfast at 7am nearly every Saturday morning at [Rikki's Family Restaurant](#) in Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715MHz with a PL of 110.9 Hz.

WESTSIDE AMATEUR RADIO CLUB

The mission of the Westside Amateur Radio Club is to provide emergency communications services to the community, to assist other civic organizations, to promote the technical craft of amateur radio through class training and testing, to mentor new members, and enhance fellowship among radio amateurs.

The Westside Amateur Radio Club meets on the second Wednesday of the month at the Chili Public Library. The Library is located at 3333 Chili Ave, Rochester, NY 14624.

The talk in repeater for all meetings is the K2RWC Repeater 146.700MHz - 110.9

Website: <http://WestsideAmateurRadio.club>

INTERLOCK ROCHESTER - K2HAX - ROCHESTER'S HACKERSPACE

Interlock Rochester is open most every Tuesday night at 7pm. We're in the Hungerford Building (1115 East Main Street, Rochester NY), just north of Village Gate. Come to Door #7 (to the left of Comics Etc) and buzz Suite 200. Want to know more? Visit our website at <http://www.interlockroc.org/>, contact us at info@interlockroc.org, or find us in #interlock on Freenode IRC.

GENESEE VALLEY AMATEUR RADIO ASSOCIATION

Email n3dsp@lafireline.net for details.

ROCHESTER MAKERSPACE

The Rochester Makerspace is located at the rear of 850 St. Paul Street in almost 4,000 square feet of workspace. We are a volunteer-run 501c(3) nonprofit organization and our mission is to encourage learning, creativity and collaboration. We do that by providing low-cost and free access to sophisticated tools, offering a wide variety of classes, and by providing opportunities for "makers," artists and crafts persons of all kinds to meet and learn from each other.

Drop in to explore, learn and make at our weekly open house:

Every Thursday Night, 6 to 10 PM – Weekly Community Night & Open House

Every Saturday, 11 AM to 3 PM – Weekly Community & Open House

Park in the lot at Scrantom St. and Conkey Ave. and follow the signs.

Every Thursday Night, 7 to 9:30 PM – Microcontrollers & Robotics Meetup

A ham bench is set up with a 2 meter FM radio and a laptop with websdr. Waiting for nicer weather to install outside antennas for the Heathkit HW101 transceiver and Kenwood all mode 2 meter transceiver. Donations of ham equipment accepted.

For more information visit Rochestermakerspace.org

ASTRONOMY SECTION ROCHESTER ACADEMY OF SCIENCE

For more information visit <http://www.rocheasterastronomy.org/>

FOR SALE

Kenwood TS440SAT and PS30 power supply in excellent condition.

Computer control ready.

Sideband filter installed.

Included is RigExpert WTI-1 remote control interface and cable assembly for use with the TS440SAT.

Firm price is \$375.

Contact Jay K2JSG at jgolden577@rochester.rr.com

THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

THE RADIO AMATEUR IS:

CONSIDERATE	Never knowingly operating in such a way as to lessen the pleasure of others.
LOYAL	Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
PROGRESSIVE	With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
FRIENDLY	With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
BALANCED	Radio is an avocation, never interfering with duties owed to family, job, school or community.
PATRIOTIC	With station and skill always ready for service to country and community.

VISIT THE RARA WEBSITE!

Did you know that your club's website (www.rochesterham.org) offers these features and more?

- Photos of meetings & events (you might be in there!)
- Info on upcoming meetings/programs
- Rochester Hamfest information!
- Online membership & renewal
- Track and redeem your Reward Points
- Public service info & sign-up
- VE testing info
- Back issues of the RAG in PDF
- Officer contact
- List of past presidents
- Online membership directory
- Useful Internet links



RARA MARKETPLACE

Your commercial ad could be here! The RARA RAG can help spread the word on your business at very reasonable rates.

Contact us for details at editor@rochesterham.org.

KPA500 KAT500 Power Combo

Plays Well With Most Popular Rigs!

Get powered up and tuned in with Elecraft's KPA500 amp and KAT500 auto tuner. The compact KPA500 is a 500watt, solid state FET amplifier for 160-6 m. It features instant RF-based band switching and a rugged internal linear power supply. The KAT500 is a high-power auto-tuner and smart antenna switch with a typical matching range at 500 W up to 10:1.

Both of these popular items work seamlessly with Elecraft® transceivers, as well as most from Icom®, Yaesu®, Kenwood® and others.



ELECRAFT®

For complete features and specifications, go to elecraft.com | sales@elecraft.com | 831-763-4211

Hamvention
May 19-21, 2017
BOOTH 1707-1711

Pass it forward
by donating your radio
or accessory to RARA.



Your item may be sold at future RARA events with proceeds to benefit RARA members.

You will get a tax-deductible receipt and the satisfaction that comes with doing good for others.

Call 585-210-8910 or email
Secretary@RochesterHam.org.

RARA is an IRS 501.c.3 non-profit

Consult with your tax advisor.

Michele A. Jamison, MD
Office Hours
by Appointment

Jamison Eye Care

www.JamisonEye.com

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Rochester, NY 14617
N2HEG



PROMOTE YOUR BUSINESS WITH RAG ADVERTISING

Ad size and cost:

Business Card	- 2 x 3.5	\$140
Quarter Page	- 4.2 x 3.5	\$300
	- 2 x 7.3	\$300
Half Page	- 4.2 x 7.3	\$600
	- 8.6 x 3.5	\$600

The above prices are **per year** - not per month as is typical in other publications.

Your advertisement will be seen by amateurs in Rochester, Monroe County, New York State, the United States and even the rest of the world. RAG circulation is approx. 4,000.

RARA OFFICERS

OFFICERS

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Secretary: Anand Choudri, KC2KPG	(585) 377-0759	kc2kpg@arrl.net

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JANUARY RAG DEADLINE

DECEMBER 15, 2017



**RARA meets at 7PM on the
first **Wednesday** of each
month. Join us at:**

Seneca Waterways Council, BSA Headquarters
2320 Brighton Henrietta Town Line Rd
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Rochester Area Repeater Listing

THE RARA RAG

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